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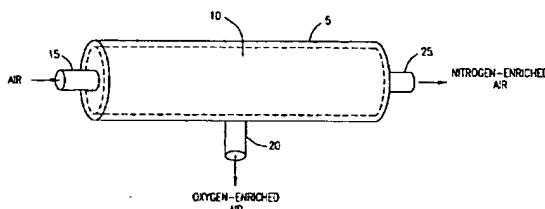
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(54) Title: METHOD AND APPARATUS FOR MEMBRANE SEPARATION OF AIR INTO NITROGEN AND OXYGEN ELEMENTS FOR USE IN INTERNAL COMBUSTION ENGINES



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(57) Abstract: A method and apparatus for reducing the emissions and improving the performance of an internal combustion engine (40). An input air stream is separated into an oxygen-enriched air stream and a nitrogen-enriched air stream. The nitrogen-enriched air stream is received by a holding chamber (35). The oxygen-enriched air and a combustible fuel are provided to a combustion chamber (45) of the internal combustion engine (40) and a combustion process is initiated. After a predefined time delay, a volume of nitrogen-enriched air is provided from the holding chamber (35) to the combustion chamber (45) to be used during the rest of the combustion process.